November 19, 2007

U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 14393
(SECOND REVISION)

EXPIRATION DATE: January 31, 2009

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Hamilton Sundstrand
Air Management Systems
Windsor Locks, CT

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification cylinder, which is integrated into a supplemental cooling unit (SCU) and/or cargo refrigeration unit (CRU) designated for use as an aircraft system, for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.306(e)(iii), (iv), (v) and (vi); 173.307(a)(4)(iv), 173.301, 173.304 and 180.205 (a) in that a non-DOT specification cylinder is not authorized except as prescribed herein.

5. BASIS: This special permit is based on the application of Hamilton Sundstrand dated July 23, 2007, submitted in accordance with § 107.105 and the public proceeding thereon, and additional information dated September 24, 2007, October 8, 2007, October 10, 2007 and October 30, 2007.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	2.2	3159	N/A
Refrigerating machines, containing non-flammable, non-toxic, liquefied gas or ammonia solution (UN2672)	2.2	2857	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification 6061-T6 seamless aluminum cylinder which is integrated into a supplemental cooling unit (SCU) and/or a cargo refrigeration unit (CRU) designated for use as an aircraft system. The non-DOT specification cylinder is made in accordance with Hamilton-Sundstrand specifications and drawings on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). Each cylinder has a maximum water capacity of 423 cubic inches and a maximum service pressure of 410 psig. The cylinder has two openings (one at each end), each of which is equipped with an electron-beam (EB) welded boss fitting.

b. OPERATIONAL CONTROLS -

(1) The SCU must be fitted with a pressure relief device (PRD) as described in the application and drawings on file with OHMSPA. The pressure relief device is a thermal fuse that consists of a stainless steel outer body with an inner fusible alloy, and will function at 212°F.

(2) The CRU must be fitted with a pressure relief device (PRD) as described in the application and drawings on file with OHMSPA. The pressure relief device is a burst disk that consists of a stainless steel body with a stainless steel rupture disk. The rupture disk will operate at a nominal burst pressure of 515 psig with a maximum tolerance of ±5%.

(3) The peak stress in the cylinder must occur at its midsection. The applied stress at the weld joint must be less than its value at the midpoint of the cylinder.

(4) Cylinder pressure cycle testing must be carried out before the attachment of the electron-beam welded boss fittings. With the exception of the boss fittings, all heat exposure to the cylinder must be completed prior to testing to ensure that the minimum yielding strength of the cylinder has not been compromised.

(5) The cylinder must be post-weld heat treated per AMS2770 to ensure that 6061-T6 mechanical properties are recovered.

(6) Each cylinder must have a safety factor of 3.0. The safety factor is the ratio of the burst pressure to the service pressure.

(7) Each SCU and/or CRU must be subjected to the series of Acceptance Tests detailed in Hamilton-Sundstrand document HSER16255 and on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA).

(8) The SCU and/or CRU cylinder will contain no more than 10 lbs of HFC-134a (Tetraflouroethane).

(9) The non-DOT specification cylinder is only authorized to be transported as part of the SCU and/or CRU.

(10) The SCU and/or CRU shipping package is a skidded, plywood cleated box. The cleated box is in the form of a wooden "box within a box". The outer box retains an inner box which contains the refrigeration unit. The inner box is surrounded by semi-rigid foam. The plywood base of the inner box bolts to the refrigeration unit and sets into the recessed cushioning material (semi-rigid foam) within the outer box.

c. TESTING - Each cylinder must be maintained and requalified in accordance with the regulations established by the Air Transport Association (ATA) Maintenance Steering Group-3 and approved by the Federal Aviation Administration as part of the aircraft maintenance schedule.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. Each cylinder must be marked in accordance with the requirements of § 178.35(f) except that "DOT-SP 14393" must be used in lieu of the DOT specification and be followed immediately by the service pressure.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft and cargo only aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety -- OHMSPA, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

for Theodore L. Willke
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm
Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.
PO: BMoore